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The Grammarian's Child

With Apologies to Mr. Kipling *

By CHENAULT KELLY, Eastern Illinois State College

In the High and Far-Off Times, the English Teacher, O Best Beloved, had no *modern* method of sentence analysis. He had only an old-fashioned, bunglesome bulgy method as clumsy as a boot, that he could wriggle about from one side of the classroom to the other; but he could not get his students—and by students, O Best Beloved, I mean the *gifted and the ungifted*—to speak, read or think better with it.

But there was one English teacher—a non-conformist English teacher—who was full of insatiable curiosity, and that means he asked ever so many questions. *And* he lived in North America and he filled all North America with his insatiable curiosity. He asked the tall English teacher in the next room why she taught her stu-

* "The Elephant's Child," *Just So Stories*.

One of the most fascinating problems facing English teachers is how to find ways of employing in the classroom the findings of the semanticists and the structural linguists. All those who keep up with the profession are aware that something important is brewing, but they are not quite sure what it is or what it will become.

Miss Kelly, who is assistant professor of English at Eastern Illinois State College, doesn't claim to have the answers, but she is making some interesting and significant explorations. The first of her two articles in this issue was delivered as a talk at last fall's IATE meeting, and extends a lively invitation to English teachers to encourage their "insatiable curiosity." The second article, written expressly for readers of the Bulletin, is necessarily not easy reading, but it is one of the few available articles that suggest ways—or possible ways—of combining in the classroom what the semanticists and the structural linguists are discovering.

dents the parts of a sentence. And the tall teacher in the next room said, "So they can classify the words in a sentence by the names *subject*, *indirect object*, *object*, silly." He asked the eighth grade teacher across the hall, "What is the object of classifying?" And the eighth grade teacher across the hall said, "So that students can tell which pronoun to use—for example, the pronouns *she* and *her*." He asked a broad-minded speaker at the NCTE meeting (she was not from his school) how she taught her students of grammar standard usage. And the broad-minded speaker at the NCTE meeting said, "My, who teaches formal grammar any more! I just correct each student when he makes the wrong choice, and wait for him to feel a need." And she looked down her nose at the non-conformist English teacher and sniffed. But *still* he was full of insatiable curiosity. He asked questions about everything he saw, or heard, or read; and all the English teachers admonished him. And still he was full of insatiable curiosity.

One fine morning in the middle of the Precession of the Equinoxes this non-conformist English teacher asked a fine new question that he had never asked before. He said, "What makes the General Semanticist so big and strong?" Then everybody said, "Hush!" in a loud and dretful tone and they waved pointers at him immediately and directly and they admonished him and shook their heads, without stopping for a long time.

By and by, when that was finished he came upon a Scientific Linguist sitting in the middle of a structural thorn bush, and said, "All my colleagues have waved their pointers at me and have admonished me for my insatiable curiosity; and *still* I want to know what makes the General Semanticist so big and strong?"

The Scientific Linguist said, in a mournful cry, "Go to the high halls of learning at a great grey-green University all set about with skyscrapers and find out."

That very next morning, when there was nothing left of the Equinoxes, because the Precession had preceded according to precedent, this non-conformist English teacher took a hundred pounds of books (the heavy weight kind), and a hundred pounds of typing paper (the long white kind), and seventeen pencils (the yellow lead kind), and said to all his dear colleagues, "Good-bye. I am going to the high halls of learning at a great grey-green University all set about with skyscrapers to find out what makes the General Semanticist so big and strong." And they all admonished him once more for luck although he asked them most politely to stop.

Then he went away, a little warm, but not at all astonished, reading the heavy weight books and throwing away the pages he could not understand.

He went from Chestine Gowdy's *English Grammar* to Jespersen's *Philosophy of Grammar*, and from the *Philosophy of Grammar* he went east by north to the *Meaning of Meaning* by Ogden and Richards, *The Structure of English* by Charles Fries, "A New Clue to Transfer," by Gertrude Hendrix, and *An Inquiry into Meaning and Truth* by Bertrand Russell till at last he came to the high halls of learning at a great grey-green University all set about with skyscrapers, precisely as the Scientific Linguist had said.

Now you must know and understand, O Best Beloved, that till that very week, and day, and hour, and minute this non-conformist English teacher had never seen a General Semanticist and did not know what one was like. It was all his insatiable curiosity.

The first thing that he found was a bi-valued Symbolic Logician all curled up on a truth table.

"'Scuse me," said the non-conformist English teacher most politely, "but have you seen such a thing as a General Semanticist in these promiscuous parts?"

"Have I seen a General Semanticist?" said the bi-valued Symbolic Logician in a voice of dretful scorn. "What will you ask me next?"

"'Scuse me," said the non-conformist English teacher, "but could you kindly tell me what makes him so big and strong?"

Then the bi-valued Symbolic Logician uncoiled himself from the truth table and admonished him with his sharp, sharp tongue and shook his head.

"This is odd," said the non-conformist English teacher, "because the tall teacher in the next room and the eighth grade teacher across the hall, not to mention the broad-minded speaker at the NCTE meeting who doesn't belong to our school, have all admonished me and have shaken their heads at me for my insatiable curiosity—and I suppose this is the same thing."

So he said good-bye very politely to the bi-valued Symbolic Logician, and helped hoist him up on the truth table again, and went on a little warm, but not at all astonished, reading books and throwing away the pages he could not understand, till he came to what he thought was a paper hanger standing on an abstraction ladder and singing over and over again, "The word is not the thing; the word is not the thing."

But it was really the General Semanticist, O Best Beloved, and the General Semanticist waved his arm like this to demonstrate vertical stratification.

"'Scuse me," said the non-conformist English teacher most politely, "but do you happen to have seen a General Semanticist in these promiscuous parts?"

Then the General Semanticist waved the other arm like this to demonstrate horizontal stratification and shook his head in the non-elemental elements and the non-conformist English teacher stepped back most politely because he did not want to be admonished again.

"Come hither, Little One," said the General Semanticist. "Why do you ask such things?"

"'Scuse me," said the non-conformist English teacher most politely, "but all my colleagues have admonished me *and* including the bi-valued Symbolic Logician, with the precise and sharpened tongue, just up the way, who admonishes harder than any of them; and so, if it's quite all the same to you, I don't want to be admonished any more."

"Come hither, Little One," said the General Semanticist, "for I am the General Semanticist," and he flashed his non-identity button to show that it was true.

Then the English teacher grew all breathless, and panted, and put one foot on the ladder of abstraction and said, "You are the very person I have been looking for all these long days. What makes you so big and strong?"

"Come hither, Little One," said the General Semanticist, "and I'll whisper."

Then the English teacher put his head close to the General Semanticist's musky, tusky mouth and the General Semanticist said, "All day long I pull people up this ladder of abstraction and today I think I shall begin with you." And the General Semanticist caught him by his old-fashioned method of sentence analysis which up to that very week, day, hour, and minute, had been no bigger than a boot, though much more useful.

At this, the English teacher was much annoyed, for you must know and understand, O Best Beloved, that although from time to time the English teacher had been impatient with his old-fashioned method of sentence analysis, still he had had it ever since he was a child and he did not want to part with it. So he said, "Let go! You are hurtig by grabbatical systub."

Then the bi-valued Symbolic Logician scuffled down from the truth table and said, "My young friend, if you do not now, im-

mediately and instantly, pull as hard as ever you can, it is my opinion that your comrade with the structural differential (and by this he meant the General Semanticist) will jerk you up the ladder of abstraction before you can say Jack Robinson."

This is the way that bi-valued Symbolic Logicians always talk.

Then the English teacher sat back on his haunches, and pulled, and pulled, and pulled, and his theory of sentence analysis began to stretch. And the General Semanticist climbed steadily up the ladder of abstraction and *he* pulled, and pulled, and pulled.

And the English teacher's grammar system kept on stretching; and the English teacher used all his mind and pulled, and pulled, and pulled; and the General Semanticist kept reaching higher and higher levels of abstraction, and he pulled, and pulled, and pulled and at each pull the English teacher's grammar theory grew longer and longer—and it hurt him hijjus!

Then the English teacher felt his feet leaving *terra firma* and he said through his grammar theory which was now nearly five feet long, "This is too butch for be."

Then the bi-valued Symbolic Logician came down from the Truth Table, and knotted himself in a double-clove-hitch around the English teacher's feet and said, "Rash and inexperienced traveler, we will now seriously devote ourselves to a little high and mental tension, because if we do not, it is my impression that yonder self-propelling aerial acrobat with the non-Aristotelian point of view [and by this, O Best Beloved, he meant the General Semanticist] will vitiate your future career."

That is the way all bi-valued Symbolic Logicians always talk.

So he pulled, and the English teacher pulled, and the General Semanticist pulled; but the English teacher and the Symbolic Logician pulled hardest; and at last the General Semanticist let go of the English teacher's method of sentence analysis with a plop you could hear all up and down the high halls of learning.

Then the English teacher sat down most hard and sudden; but first he was careful to say "Thank you," to the bi-valued Symbolic Logician; and next he was kind to his poor pulled grammar theory and wrapped it all up in red tape and hung it in the shade of a skyscraper to cool.

"What are you doing that for?" asked the bi-valued Symbolic Logician.

"Scuse me," said the English teacher, "but my grammar theory is badly out of shape, and I am waiting for it to shrink."

"Then you will have to wait a long time," said the Symbolic Logician. "Some people do not know what is good for them."

The English teacher sat there for three years waiting for his grammar system to shrink. But it never grew any shorter, and, besides it made him think! For, O Best Beloved, you will see and understand that the General Semanticist had pulled it out into a really modern and comprehensive system of sentence analysis same as all English teachers have today.

At the end of the third year, a verbalized problem full of "if . . . then's," "and so's," "therefore's" and "buts" came along and stung him on the shoulder, and before he knew what he was doing he lifted up that new system of his and solved the problem in a trice.

"'Vantage number one!" said the Symbolic Logician. "You couldn't have done that with a mere-smear system of sentence analysis. Try and read a little now."

Before he thought what he was doing the English teacher picked up one of the heavy weight books he had thrown away because he could not understand it, dusted it clean against his shirt sleeve, and read the book from cover to cover, understanding all he wanted to understand of it.

"'Vantage number two!" said the Symbolic Logician. "You couldn't have done that with a mere-smear method of sentence analysis. Now how would you like to teach children to pick out subjects and direct objects?"

"'Scuse me," said the English teacher. "I should not like that at all."

"'Vantage number three," said the bi-valued Symbolic Logician. "You won't ever need to with that new system of yours. Now, how would you like to teach your students how to read and write and think clearly?"

"I should like that very much, indeed," said the English teacher.

"Well, you will find that new system of sentence analysis of yours very useful to teach people how to verbalize their concepts and to interpret the verbalized concepts of others."

"Thank you," said the English teacher, "I'll remember that; and now I think I'll go home to all my dear students and try."

So the English teacher went home across North America frisking and whisking his new method of sentence analysis. One dark evening he came back to all his dear colleagues, and he coiled up his new method and said, "How do you do?" They were very glad to see him and immediately said, "Come here and be admonished for your insatiable curiosity."

"Pooh," said the non-conformist English teacher. "I don't think you people know anything about admonishing; but I do and I'll show you."

Then he uncurled his new system for teaching sentence forms and knocked two of his dear colleagues head over heels.

"O Participles!" said they, "where did you learn that trick, and what have you done to your grammar system?"

"I got a new one in the high halls of learning at a great grey-green University all set about with skyscrapers," said the English teacher.

"It looks very ugly," said the tall teacher in the next room.

"It does," said the English teacher. "But it is very useful. Come to my classroom tomorrow and I will show you what I can do with it."

So the next day, all the teachers crowded into the English teacher's classroom to watch a lesson. Instead of manipulating words like *direct object*, *auxiliary verb*, and *preposition*—words rarely seen outside of a grammar classroom—the children were studying the effect upon sentences of such words as *each*, *all*, *if* . . . *then*, *a*, and *the*—words they had to use or read over and over again inside of all kinds of classrooms and outside as well. Instead of parsing, the students were studying four simple but strange looking non-verbal symbol clusters that looked for all the world like the formulas they were accustomed to in chemistry, mathematics, and physics. Instead of learning untrustworthy rules such as "the object is the undergoer of the act," the children were discovering the difference between assertion and denotation, between proper names and descriptions, between inductive and deductive reasoning. They were discovering that attributes classify, that relations may be symmetrical or asymmetrical, that some sentences have truth value and others do not, that the word *is* has four entirely different duties; and that furthermore, all this knowledge was valuable to them everywhere they went. Whenever the non-conformist English teacher had time, he showed his students how to use the non-verbal symbols in solving simple little problems of deduction and inference. And whenever he wished to teach standard usage, he let his pupils discover for themselves *what* to use by applying the Hendrix delayed verbalization theory of learning.

Well, things grew so exciting in that classroom of language study, that all his dear colleagues went off one by one in a hurry to the high halls of learning to acquire new systems of sentence analysis. When they came back, nobody admonished anybody any more; and ever since that day, O Best Beloved, all English teachers you will ever see, besides all those that you won't, have sentence analysis methods precisely like the method of the non-conformist English teacher with the insatiable curiosity.

Four Sentence Forms

and Their Relation to the Teaching of English

By CHENAULT KELLY

Our present grammar as it is taught with artificial classifications and gratuitous constructions, is based on obvious misunderstandings of the structure of language. We should like to hope that the results of symbolic logic will some day, in the form of a modernized grammar, find their way into elementary schools.

HANS REICHENBACH, *Elements of Symbolic Logic* (1947)

Although "obvious misunderstandings of the structure of language" are not peculiar to grammarians, the sentiment expressed by one of the most able philosophers of his time has prompted at least one teacher of English to attempt a reorganization of "our present grammar" based upon "the results of symbolic logic." The material in this paper represents an incomplete sketch of the work in progress.

In order to understand the structure of language in the sense that modern logicians desire, we must first understand the nature of four sentence forms. Now sentence forms are not sentences any more than essay forms are essays, short story forms are short stories, sonnet forms, sonnets. Sentence forms and sentences are like blueprints and houses, musical scores and concerts, recipes and cakes, paper patterns and silk dresses. They are patterns for forming sentences and not the sentences formed from following those patterns. We could say that sentence forms are composed of word variables such that when these word variables are replaced by words, the results are sentences.

In current linguistic discourse, there are at least three ways of describing sentence forms or stating sentence formation rules—traditional, structural,¹ and statemental.² One of the traditional rules for forming sentences in the English language, for example, is fulfilled by a series of four words, first an article, second a substantive, third a verb of a certain class, and fourth an adjective. If we replace the word variables in this traditional sentence form with

1. Charles C. Fries, *The Structure of English*. New York: Harcourt Brace and Company, 1952.

2. The rules which I have called "statemental" are derived from the work of various philosophers: Bertrand Russell, Rudolf Carnap, Hans Reichenbach.

words, we will have a sentence: e.g., *The book is green*. The corresponding structural sentence form determines that a series of four words, first a functional word, Group A, second a form word, Class I, third a form word, Class II, fourth a form word, Class III constitute a sentence. The corresponding statemental sentence form is a cluster of symbols— f_x . The sentence, *The book is green* satisfies the requirements of all three sentence formation rules cited above—traditional, structural, statemental.

Statemental rules are both more and less exacting in their demands than either of the other two. As an example of their exactness, let us observe the effect upon the original sample sentence, *The book is green*, when one word is replaced by another. When the definite article is replaced by the indefinite article, the resulting sentence, *A book is green* violates the statemental rule, f_x ; it does not violate either the traditional or the structural rule. Again, if the asserting element in the original sample sentence is replaced by an asserting element in the past tense, the resulting sentence, *The book was green*, violates only the statemental rule; it does not violate either of the other two. The statemental rule is restrictive, then, in the sense that 1) the word for the variable symbolized by the letter x must be accompanied by the definite article or its semantic equivalent, e.g., *this*, *that*, a proper name; and 2) the word for the variable symbolized in the sentence form by the position of x as a subscript of f^3 must be *is* or its semantic equivalent, e.g., *seems*, *appears*.

The ways in which statemental rules are less exacting than their structural and traditional counterparts can be illustrated by composing certain other variations of the sample sentence, *The book is green*—variations which are permissible under the terms of the statemental rule, only.

1. That book is green.
2. The book which is the third from the end of the second shelf on the north wall of the library is green.
3. The first book is green.
4. *Huckleberry Finn* is a green book.⁴
5. The book is dark green.
6. Green is the book.
7. This is a green book.

3. Later we shall see that the position of x on a lower level than f makes a sort of diagram of the two consecutive levels of abstraction which must be present in all sentences of this form.

4. In Sentence 4, the individual denoted by phrases such as "this book," or "that book" can also be denoted by a proper name.

What is the nature of all of the seven sentences which we composed according to the specifications in the form f_x ? In the language of traditional grammar, we say that their asserting elements are in the third person, singular number, present tense; and that all of the sentences are statements or declarative (indicative) sentences. In the language of scientific linguistics, we say that all of the sentences contain exactly the same word (combination of letters *i-s*, or combination of phonemes *I-s*) and that this particular word never begins the sentence, but always occupies a middle position separating two other words which, with the exception of Sentences 4, 6, and 7, also occupy relatively the same position in the sentences. In the language of pure semantics, we say that the sentences are about a particular individual, which is sometimes denoted by a descriptive phrase and sometimes by a proper name; that the individual in question has a certain property (attribute) or belongs to a certain class—a class or attribute designated in each case by the word *green*; and that the sentences are of the kind that can be tested for truth value. To say that a sentence has "truth value" means that the sentence must be true or false. A sentence is factually true if conditions in the real universe are as asserted in the sentence. A sentence is false if conditions in the real universe are not as stated in the sentence (the book in question, for instance, upon observation turns out to be yellow).

If all of the statements we use to describe our universe were of the *This book is green* variety, there would be no need to study the nature of any sentence form other than f_x . Such, however, is not the case. We actually use, in conversation as well as scientific discourse, at least three other kinds of statements, statements such as *This book is "The Jungle Book,"* *A book is a friend*, and *There (not meaning place) is a book*. Analysis of these sample sentences upon structural or traditional lines would not reveal how different in meaning each sentence is from the others. Only an understanding of the nature of their underlying forms can make differences in meaning clear. Let us see how different the sentence forms for the last three statements are: $x = y$, $(x) (f_x \rightarrow g_x)$, and $(\exists x) (f_x \cdot g_x \dots n_x)$. In the following pages, the nature of each one of these forms, which together with the first one mentioned (f_x) make four in all, is briefly discussed; and the possibility of their use in the teaching of English, considered. But before proceeding further, we should look at some of the evidence supporting Reichenbach's statement that there have been "obvious misunderstandings of the structure of language."

The literature of the General Semanticists⁵ provides several examples, but only a few will be mentioned here. Hayakawa, for instance, criticizes modern logicians for calling *is* in the following sentence the "*is* of identity": "*This is* (pointing to Bossie) *a cow*."⁶ Since logicians do not call that particular *is* the "*is* of identity," he has 1) used an inappropriate example or 2) mislabeled the particular *is*. The *is* in Hayakawa's illustrative sentence is called by modern logicians the "*is* of predication," since it operates between two distinct consecutive logical levels, one being the level of the individual denoted by the word *this*; the other, the level of a class of individuals designated by the word group, *a cow*. This difference in levels of abstraction shows up clearly when the words are replaced by logical symbols: i.e., by C_t , where the capital letter C stands for the class designated by the phrase "*a cow*," and the lower case t stands for the word *this*. If Hayakawa had composed the sentence, *This is Bossie*, he would have accurately fulfilled the requirements of the sentence form which calls for the *is* of identity. Here, the *is* operates on only one level of abstraction—the object level or the "point-at-able" level. In this sentence, there is only one referent, but the referent is denoted by two words, one of which is a proper name and the other of which has the force of a proper name. The logical symbol cluster devised by logicians to represent this sentence not only conveys the meaning of identity by the use of the identity sign common to mathematical equations, but also conveys the single-levelness of the terms by means of the linear arrangement of the symbols: $x = y$.

Confusion of grammatical and logical aspects of the four *is*'s is apparent in the work of Irving Lee. Four of the sample sentences Lee uses to illustrate each of four *is*'s are as follows: He *is* reading," (an auxiliary in the formation of tenses); "He *is* most charitable," (*is* of predication); "Joe *is* a radical," (*is* of identity); and "The Capitol of the U. S. *is* at Washington, D. C." (*is* of existence).⁷ All four of the sample sentences are of the two-level type; that is, they fulfill requirements for one and only one of the logical

5. S. I. Hayakawa, Hugh Walpole, Stuart Chase, Irving J. Lee, Wendell Johnson, and others, all of whom trace their ancestry, semantically speaking, to Alfred Korzybski, avowed devotee of Non-Aristotelian Systems.
6. "The Meaning of Semantics," *Readings for Our Times*, edited by Harold Blodgett and Burges Johnson. New York: Ginn and Company, 1942, p. 378.
7. *Language Habits in Human Affairs*. New York: Harper and Brothers, 1949, pp. 228-257. See also Korzybski, *Science and Sanity*. Lakeville, Connecticut: The Non-Aristotelian Library Publishing Company, 1933, pp. 408-409.

sentence forms— f_x . Every *is* in the four sample sentences should be classified, therefore, as an *is* of predication.

Hayakawa's Abstraction Ladder,⁸ which was adapted from the Structural Differential of A. Korzybski, provides a second point of difference between the two schools of thought—General Semantics and symbolic logic. Let us skip the two lowest parts of the diagram and start with the word "Bossie" (the proper name for a particular, observed cow) and continue on up through the so-called five levels represented in the diagram. Arranged in laundry list style we have then

- ETC.
 5) "wealth"
 4) "assets"
 3) "farm assets"
 2) "livestock"
 1) "cow"
 0) "Bossie"

Now let us design another ladder of abstraction—one that could have come from symbolic logic. It, too, begins with the proper name, "Bossie."

- ETC.
 2) "herd"
 1) "cow"
 0) "Bossie"

By comparing the two ladders one might draw the conclusion that the General Semantic ladder is much taller, hence has more levels than does the logical one. But such is not the case. The levels of abstraction in the series derived from symbolic logic go one step higher than those pictured in the General Semantic ladder. Pictorially, the General Semantic ladder of abstraction should look like this:

- 1) "cow" 1) "livestock" 1) "farm assets" 1) "assets" 1) "wealth"
 0) "Bossie"

If sentences are formed out of pairs of words in the General Semantic series, we have *Bossie is a cow*, a *bona fide* two-level assertion, individual to class of individuals; *A cow is livestock*, which asserts that one class is a sub-class of another, class to class; *Livestock is a farm asset*, which also asserts that one class is a sub-

8. *Language in Action*. New York: Harcourt Brace and Company, 1939, p. 126.

class of another, class to class; *Farm assets are assets*, which is another single level, class to class assertion; and so on.

Now let us see by way of contrast, sentences formed from pairs of words in the three-level abstraction ladder pictured—the ladder based upon results of symbolic logic.

Bossie is a cow. Individual, to class of individuals. 0—1

That collection of cows is a herd. Class, to class of classes of individuals. (1—2). It is wrong to say “A cow is a herd.”

Logical levels of abstraction, then, begin with proper names or descriptions of individuals, and proceed from there to classes or attributes of individuals, and from there to classes of classes of individuals,⁹ and so on indefinitely.

One of the easiest ways to test whether or not sentences belong to the two-level abstraction or the one-level sub-classification kind is to apply the syllogism test. Syllogisms result in conclusions which are not valid if more than two logical levels are designated by the components. Compare the following:

EXAMPLE ONE

Bossie is a cow. 0—1

A cow is livestock. 1—1

Therefore, Bossie is livestock. 0—1

(Syllogism holds. Conclusion, valid.)

EXAMPLE TWO

Bossie is a cow in that pasture. 0—1

The cows in that pasture are a herd. 1—2

Therefore, Bossie is a herd. 0—2

(Syllogism does not hold. Conclusion not valid because more than two logical levels are designated by the terms. The words *Bossie* and *herd* do not designate entities on consecutive logical levels.)

More familiar, perhaps to teachers of English, however, are the misunderstandings which develop among their students from the “artificial classifications” which still exist in current tradition-based English textbooks. Citing chapter and verse, linguist-grammarians Charles C. Fries¹⁰ shows us exactly how such ambiguous technical terms as “subject” or “indirect object” have caused and are still causing confusion among students of the language;

9. Or attributes of classes of individuals, or attributes of attributes of individuals, or classes of attributes of individuals.

10. *The Structure of English, passim.*

and he would have us consider another system of sentence analysis—a system dictated by structure, i.e., by the relative position of component words in “single free utterances, minimum or expanded.” And in order to avoid ambiguity inherent in traditional terms, he has substituted “longer, more cumbersome descriptive statements.”¹¹

However, even a structurally based system may not prevent our students from confusing the expletive *there* with a form word, Class I in a pair of such similar looking utterances as *That is a green book* and *There* (not meaning place) *is a green book*, which brings us back to our starting point and the expressed hope of Hans Reichenbach that “the results of symbolic logic will some day, in the form of a modernized grammar, find their way into elementary schools.”

The results of symbolic logic include four sentence forms: the *is* of identity, $x = y$; the *is* of predication, f_x ; the *is* of sub-classification, $(x) (f_x \rightarrow g_x)$; and the *is* of existence, $(\exists x) (f_x \cdot g_x \dots n_x)$. From these forms let us compose sentences and note some of the logical and grammatical concepts which they yield.

Sample Sentences	Symbolic Forms	Meaning
The purple turtle is Myrtle.	$t = m$ ¹²	<i>is</i> of identity
Myrtle is a purple turtle.	$T_m \cdot P_m$ ¹³	<i>is</i> of predication
There is a purple turtle.	$(\exists x) (T_x \cdot P_x)$ ¹⁴	<i>is</i> of existence
A purple turtle is a nuisance.*	$(x) (P_x \cdot T_x \rightarrow N_x)$ ¹⁵	<i>is</i> of sub-classification

IS OF IDENTITY

Sentence form: $x = y$

LOGICAL CONCEPTS: Individuals can be denoted in two ways,

11. *Ibid.*, p. 2.

12. Myrtle is identical to the purple turtle.

13. Myrtle is a turtle and Myrtle is purple.

14. There exists an x such that x is a turtle and x is purple.

15. For every x , if x is a turtle and x is purple, then x is a nuisance. (*If the word *nuisance* denotes a value judgment, the discussion here takes quite a different turn, but that is another chapter.)

i.e., by descriptions usually signaled by the word *the*¹⁶ or by proper names.

The words *I, now, this, that, here* have the force of proper names.

In sentences of this form, the asserting element *is* joins two denoting phrases but both of these phrases denote the same individual. In the sample sentence, the proper name, *Myrtle*, and the description, *the purple turtle* have identically the same referent.

GRAMMATICAL CONCEPTS: The word *is* may be replaced by other words and word groups in order to indicate time of the assertion, time sequence, and degree of certainty or doubt in the mind of the speaker.

Myrtle is the purple turtle.

Myrtle was the purple turtle.

Myrtle will be the purple turtle.

Myrtle has been the purple turtle ever since four o'clock.

Myrtle had been the purple turtle before any of us heard the story.

Myrtle will have been the purple turtle for three years by the time this letter reaches you.

Variations of the original sentence will show degrees of certainty or doubt in the mind of the speaker:

The purple turtle may be Myrtle.

The purple turtle must be Myrtle.

The purple turtle seems to be Myrtle.

The word *Myrtle* may be replaced by other words to indicate first and second person. When this happens the asserting element changes its form.

I am the purple turtle.

You are the purple turtle.

IS OF PREDICATION (CLASS-INCLUSION)

Sentence forms: f_x ; r_{xy} ; r_{xyz}

LOGICAL CONCEPTS: Proper names and descriptions of individuals are on a lower logical level than class names. Proper names and descriptions denote; class names designate. Denotation (pointing out) is possible when individuals are concerned; not possible with attributes or classes of individuals. For example, in a poolful of turtles it is possible to point to the only turtle in the pool

16. Exception: *The turtle is found on dry land and in the sea.* For a full discussion of descriptions and proper names, see Bertrand Russell's essay "On Denoting," which is included in Readings in *Philosophical Analysis*, edited by Herbert Feigl and Wilfrid Sellars. New York: Appleton-Century-Crofts, Inc., 1949, pp. 103-115.

which responds to the name of Myrtle or which can be described also as the purple turtle, but it is impossible to point to (denote) the class designated by the phrase *a purple turtle*. We can point to individual members of a class—not to the class itself. Class names are really conveniences contrived by us to help ourselves communicate with each other about experiences, events, objects which would otherwise require a lot of pointing—pointing that would require travel through time as well as space.

Articles *a* and *an* signal class names in the singular.

The sentence, *Myrtle is a purple turtle*, is a molecular sentence composed of two atomic sentences: *Myrtle is purple*, and *Myrtle is a turtle*. The truth of atomic sentences is determined empirically, but the truth of molecular sentences can be determined by logical processes. Molecular sentences containing the conjunction *and* or its semantical equivalent are true if and only if both atomic sentences are true; they are false if one or both of the atomic sentences are false.

There are many attributes besides color which can be asserted about an individual: *Myrtle is slow*, *Myrtle is happy*, *Myrtle is laughing*.

Attributes classify. We have just classified Myrtle in four ways: we have put her in a class of purple, slow, happy, and laughing things.

One of the classifying attributes is action: *Myrtle is laughing*.

Some predicates designate relations between individuals, hence are more than one-place (monadic) predicates. Some are two- and three-place predicates (dyadic, triadic): *Myrtle is breaking her shell*, two-place, B_{ms} ; *Myrtle is somewhere between Chicago and Kankakee*, three-place, B_{cmk} ; *Myrtle is the sister of Joan*, two-place, S_{mj} ; *Myrtle is the sister of Robert*, two-place, S_{mr} ; *Myrtle is sadder than Joan*, two-place, S_{mj} ; *Myrtle gave them her front foot*, three-place, G_{mft} .

In connection with two- and three-place predicates, it is possible for students to discover the difference between relations which are symmetrical and those which are asymmetrical. A relation is symmetrical when, if it holds between x and y , it also holds between y and x ; e.g., similarity (*Mary is the same age as Ruth*) and dissimilarity (*Charleston Illinois is not like Chicago*). A relation is asymmetrical when, if it holds between x and y , it cannot hold between y and x ; e.g., *Chicago is north of Charleston*. Russell states that non-symmetrical relations, that is, relations that are neither symmetrical nor asymmetrical, are of the "utmost importance, and many famous philosophers are refuted by their exis-

tence.”¹⁷ The word *sister* designates a relation which is non-symmetrical, since if x is the sister of y , y may be the brother of x .

GRAMMATICAL CONCEPTS: Relational predicates include concepts traditionally designated by an outlay of technical terms capable of spreading confusion everywhere they go: “transitive” and “intransitive” verbs; “comparatives”; the object family—“direct,” “indirect,” “retained”—tiresome troublemakers in the active to passive voice routine.

IS OF EXISTENCE

Sentence form: $(\exists x) (f_x \cdot g_x \dots n_x)$

LOGICAL CONCEPTS: If we know that either one or both of the sentences, *The purple turtle is Myrtle* and *Myrtle is a purple turtle* are true, then we can compose another sentence which is also true by stating, in one way or another, that a member of the class designated by the phrase “a purple turtle” exists. Conversationally speaking, we could say *There is a purple turtle*, or *Some turtles are purple*, or *At least one turtle is purple*, or *A few turtles are purple*, or *There are purple turtles*. Logically speaking, we assert that there exists something (x) and this something is purple and is a turtle. Truth of such statements—existentially qualified statements—is established empirically; i.e., by producing or discovering at least one member of the class of individuals about which the assertion of existence is made.

GRAMMATICAL CONCEPTS: The asserting element, *is*, or its grammatical equivalent must be replaced by the word *are* or its grammatical equivalent when the existence of more than one member of a class is asserted; e.g., *Some turtles are purple*.

IS OF SUB-CLASSIFICATION

Sentence form: $(x) (g_x \rightarrow f_x)$

LOGICAL CONCEPTS: The sentence, *A purple turtle is a nuisance* is molecular, and therefore its truth value can be determined by logical processes; the truth values of its atomic sentence components can be determined empirically. Restated to reveal its logical form we say, “If something is a purple turtle, then it is a nuisance.” The included statement preceded by the word *if* is called the “antecedent”; the included statement preceded by the word *then*, the

17. Bertrand Russell, *An Inquiry into Meaning and Truth*. London: George Allen and Unwin Ltd., 1940, p. 43.

"consequent." Sentences of this form are false only when the antecedent is true and the consequent is false.

Another important concept to be learned from studying sentences of this form—universally quantified sentences—is that they are strictly conditional, i.e., they do not assert existence of class members. They merely state that if a member of a class—say purple turtles—exists, then it also exists as a member of another and encompassing class—say nuisances. Therefore, truth of universally quantified sentences cannot be determined empirically.

Substitution instances (logically equivalent) of universally quantified sentences are as follows:

If it¹⁸ is a purple turtle, then it is a nuisance.

If it is not a nuisance, then it is not a purple turtle.

It's impossible for something to be a purple turtle and not be a nuisance.

It is not a purple turtle or it is a nuisance.

Every purple turtle is a nuisance.

All purple turtles are nuisances.

Any purple turtle is a nuisance.

Only nuisances are purple turtles.

GRAMMATICAL CONCEPTS: The singular form of the asserting element (*is, was*) is used with *each, every, any*; the plural form, with *all*.

The article *a* precedes class names beginning with a consonant; the article *an*, class names beginning with a vowel.

Consistency must be maintained with respect to person, number and gender of proper names and description which have the same referent. Examples:

If *Myrtle* is a purple turtle, then *she* is a nuisance.

If *Jerry* is a purple turtle, then *he* is a nuisance.

If *Myrtle* and *Jerry* are purple turtles, then *they* are nuisances.

If *that* is a purple turtle, then *it* is a nuisance.

When the *if* clause (antecedent) precedes the *then* clause (consequent) the two clauses are usually separated by a comma. This

When _____, _____.

While _____, _____.

Until _____, _____.

Because _____, _____.

Since _____, _____.

Etc.

18. The word *it* is the best verbal equivalent for *x* that we have in conversational language.

punctuation rule holds for all variations of this sentence form in conversational speech.

In a fragmental way, the material in this paper constitutes a definition of the statemental approach to the study of English. The statemental approach is based upon sentence forms resulting from symbolic logic. It seems to divide itself naturally into two parts: formation rules, which include logical concepts, only; and variation rules, which allow for all the kinds of utterances we require for everyday conversation. It retains in a simpler form many concepts considered by traditionalists and structuralists necessary to the proper study of language. But more importantly, it adds to these some insight into the nature of sentence forms and the nature of all the little words that make such a big, big difference: *the, a, (an), is, if . . . then, and, or, not, all, some, only, every, each.*

Why not attend . . .

UNIVERSITY OF ILLINOIS SUMMER SESSION, 1956

June 18–August 11

Courses for Advanced Undergraduates

- English 255. Survey of American Literature—from 1607 to the Civil War.
11 MTWTF, 12 Friday Robert Haig
- English 256. Survey of American Literature.—from the Civil War to the
mid-twentieth century. 2 MTWTF, 3 Friday. Sherman Paul
- English 273. Poetry since 1920. American and British poets, including Eliot,
Pound, Stevens, Cummings, MacLeish, Crane, Moore, Sitwell, Auden,
Thomas, and several younger poets. 10 MTWTFS. Kerker Quinn

Courses for Advanced Undergraduates and Graduates

(All courses offer three hours credit for undergraduates; $\frac{1}{2}$ to 1 unit for graduates.)

- English 311. Chaucer. 9 MTWT; 9-11 Friday. Gardiner Stillwell
- English 325. English Literature from 1588 to 1660.—Survey of English
Literature of the Renaissance. Sidney, Marlowe, Donne, Jonson, Herrick,
Bacon, Burton, and other writers. 10 MTWT; 7-9 p.m. Monday.
Burton Milligan
- English 338. Tragedy.—Comparative study of masterpieces in several pe-
riods of western culture. Major emphasis on ancient Greek and Roman,
and English Elizabethan and Stuart drama. 8 MTWT; 7-9 p.m. Tuesday.
Burton Milligan
- English 355. Survey of English Literature.—from the beginning to 1700.
9 MTWTF; 3 Tuesday. Marcus Goldman
- English 356. Survey of English Literature.—from 1700 to 1900.
10 MTWT; 7-9 p.m. Thursday Robert Rogers
- English 357. Folklore in American Literature.—a study of American folk-
lore, including folk tales, themes, and characters, with special reference
to the appearance of such material in American fiction, poetry, and drama.
8 MTWT; 1-3 Wednesday. John Flanagan
- English 382. The Plays of Bernard Shaw. 1-3 TTF. Charles Shattuck
- English 383. English Literature in the Twentieth Century.—An introduc-
tory survey emphasizing Shaw, the Edwardian novelists, Yeats, Joyce,
Lawrence, Eliot, the Bloomsbury group, the satirists of the twenties, and
such recent writers as Auden, Orwell, and Graham Greene. 11 MTWTF;
12 Tuesday. Bruce Harkness

Courses for Graduates

- English 403. History of the English Language. 11 MTWTFS.
Roland Smith
- English 445. Literature of the Eighteenth Century. 9 MTWT.
Robert Rogers
- English 439. Problems in American Literature and Cultural History.—
Hemingway and Faulkner. 10 MTWT. John Flanagan
- English 480. Workshop. (See description given elsewhere in this *Bulletin*.)
- English 492. Research in Special Topics (Thesis). $\frac{1}{4}$ to 4 units credit.

**UNIVERSITY OF ILLINOIS
DIVISION OF UNIVERSITY EXTENSION
URBANA**

Announces a Summer Workshop

Conducted by

**The Department of English in Cooperation
With the National Council of Teachers of English**

**MATERIALS AND METHODS FOR TEACHERS
OF HIGH SCHOOL ENGLISH**

(Planning the content of the high school English course)

ENGLISH E480

Dates: July 9—August 3, 1956

Credit: 1 graduate unit for those who wish it and who are qualified for admission to the University of Illinois Graduate College. (The equivalent of 4 semester hours in Graduate Schools operating on the semester hour plan)

Overview of Course: Workshop procedures, with participants attempting under guidance to find solutions to some of their problems in planning course content and in teaching that content to students in junior and senior high schools. Some lectures, with considerable time for the instructors to meet with individuals and small groups. Individual study, supplemented by group discussion of mutual problems. Scheduled meetings to be confined to morning hours, with afternoons for work in the library and elsewhere.

Personnel: In charge, J. N. Hook, Professor of English, University of Illinois; Executive Secretary, National Council of Teachers of English; Editor, *Illinois English Bulletin*; author of numerous books and articles.

Miss Lou LaBrant, Professor Emeritus, New York University; Past President, National Council of Teachers of English; author of over 200 professional articles and several books.

Mrs. Luella B. Cook, formerly coordinator of the English Curriculum, Minneapolis Public Schools; President, National Council of Teachers of English; author of numerous books and articles.

A. Lynn Altenbernd, Instructor in English, University of Illinois; formerly a high school teacher.

Mr. Hook will be the leader during the first and fourth weeks, putting major stress on the teaching of composition. Miss LaBrant will serve as leader during the second week, emphasizing semantics, linguistics, and growth of children's language powers. Mrs. Cook will lead during the third week, stressing reading and literature. Mr. Altenbernd will assist all three.

Classrooms: Classes will be held in the air-conditioned new Law Building on the University Campus.

Special features: Plans are being made to help workshop participants enjoy the cultural and recreational opportunities of the University of Illinois Summer Session. In addition, special short trips and social occasions are being planned. Additional lectures on literary and educational topics are also being arranged.

Housing: Available in University approved housing. Arrangements may be made after you reach the campus; or you may write to the Housing Division, Illini Hall, Champaign, Illinois.

Registration: Registration for the entire group will be handled at 8:00 a.m., July 9, Room 158, New Law Building. Applicants who expect to be admitted to regular standing or as candidates for degrees in the Graduate College should have official transcripts from all institutions attended other than the University of Illinois available in the Office of Admissions by the first meeting of the class. Those who have previously registered with the University, and have transcripts on file, should not resubmit them. It will be helpful if those planning to attend notify the Department of English in advance.

Fees: \$30.50 per person—payable at the first class meeting.

FOR FURTHER INFORMATION
WRITE THE
DEPARTMENT OF ENGLISH
UNIVERSITY OF ILLINOIS
URBANA, ILLINOIS

DISTRICT MEETINGS—PAST AND FUTURE

Some very challenging programs have been planned by various district groups of the Illinois Association for this spring. Four have been held in April, and two are scheduled for May. Notice of the April meetings was received too late for the kind of advance notice it is desirable to give.

The Rock River Division, joined by the Illinois Valley and the Northwestern Divisions, will hold a meeting on May 5 at which there will be a panel discussion on "The Freshman English Program at the University of Illinois and its Implications." The panel members will be Dr. Charles Roberts, Dr. S. O. Baker, Mr. Frank Morley, Mrs. Laura Kloster, and Mr. Vernon Adams. For details as to place and time write to Mrs. Helen Ellis, 714 Eighth Street, Rochelle, the conference chairman.

On May 26 from 9:30 to 2:00 p.m., at Northwestern University, the Lake Shore Division will hold a meeting devoted to a discussion of problems common to college freshman composition and high school English. The program chairmen are Mrs. Charlotte C. Whittaker and Dr. Wallace Douglas.

During April the Eastern and Southeastern Divisions held a joint meeting at Eastern Illinois State College, under the chairmanship of Dr. Charles Waffle. The Western Division held a meeting at which Dr. Charles Roberts was the speaker and Mrs. Adele Armstrong of Bushnell was the chairman. The Southern Illinois English Teachers Association held its annual spring meeting on April 21 at Southern Illinois University. The chairman was Dr. George Camp and the speaker was Dr. J. N. Hook. On April 24 the Peoria Division held a dinner meeting at Pekin Community High School. Once more Dr. Roberts was the speaker, and the chairman of this meeting was Miss Florence Diers of Pekin.

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey

Report of the Director

for the year 1898

Washington, D. C.

1899

Published by the Government Printing Office

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